

The PACE Legislation requires NYSERDA to establish criteria for determining the cost-effectiveness of Energy Efficiency Improvements. An improvement is deemed to be cost-effective when it is included in the lists of “Pre-Qualified Energy Efficiency Improvements” approved by NYSERDA or if it has a Cost Benefit Ratio (CBR) of 1.0 or greater.

It should be noted that while a specific improvement may be deemed to be generally cost-effective, and therefore approved as an improvement eligible for PACE financing, there is no guarantee that the improvement will be cost-effective in every application. In addition, because the CBR takes into account societal benefits, it should not be assumed that an improvement deemed cost effective will pay for itself in energy bill savings over the life of the PACE loan or over the average life of the improvement.

This guidance should be used for the following purposes:

- Approval of a proposed Energy Efficiency Improvement, which may be calculated at the project level or for each measure, if appropriate, for PACE financing by a municipality if the Energy Efficiency Improvement is not on the list of “Pre-Qualified Energy Efficiency Improvements”; or,
- Request from a manufacturer or other entity to include an Energy Efficiency Improvement on the list of “Pre-Qualified Energy Efficiency Improvements.” The requestor must include the details of the CBR calculation, along with assumptions used in the calculation, with the request form on NYSERDA’s website at <https://www.nyserderda.ny.gov/All-Programs/Commercial-Property-Assessed-Clean-Energy-PACE-Financing-Resources> and submit the request in accordance with the instructions on the form.

Treatment of Ancillary Measures

NYSERDA recognizes that, in some cases, certain ancillary measures must be accomplished for improvements to proceed or to resolve energy-related health and safety issues, and that these ancillary measures may not contribute to energy savings. These may include, but are not limited to mold mitigation, lead abatement, asbestos removal, flue repairs, repair of gas leaks, ventilation improvements, installation of smoke and carbon monoxide detectors, and minor roof repairs. Ancillary improvements also include system components for improved systems for existing buildings, or new systems for new construction required for energy recovery, ventilation, or to heat and cool a building, such as ducts, and electrical work for building electrification.

NYSERDA suggests that PACE program administrators, at their discretion, may include the costs associated with such necessary ancillary measures in PACE financing. Ancillary costs related to health and safety measures are excluded from the CBR calculation, while non-health and safety measures needed for implementation should be included. However, PACE program administrators must ensure that including ancillary measures does not extend the term of the PACE financing repayment period beyond the weighted average of the useful life of the improvements included in the project, without

including the approved ancillary measures, and does not exceed the maximum PACE financing allowed per project, as specified in NYSERDA's PACE guidance document.

Determining the Energy Savings

NYSERDA considers the savings methodologies included in the New York Standard Approach for Estimating Energy Savings from Energy Efficiency Programs (also known as the "Technical Resource Manual"¹), as filed and effective pursuant to Public Service Commission Matter Number 15-01319: In the Matter of the Technical Resource Manual, one acceptable approach for calculating energy savings for Energy Efficiency Improvements.

NYSERDA also considers third-party testing of products in a laboratory recognized by the US Environmental Protection Agency <https://www.energystar.gov/partner-resources/products-partner-resources/third-party-cert> an acceptable approach for verifying savings.

Calculating the CBR

CBR divides the total estimated benefits (including energy savings, societal benefits, and other project related benefits, as described below) over the lifetime of the proposed project (at present value) by the total eligible construction and other required costs (e.g., assessment costs) that are part of PACE Financing. A municipality may decide to use a simple CBR calculation or to add other factors as appropriate, as described below. An improvement is deemed to be cost-effective when it has a CBR of 1.0 or greater.

1. **Total Savings.** The following may be considered in determining the value of the total savings, including those savings from Pre-Qualified Measures:
 - Value of expected energy cost savings for an Energy Efficiency Improvement over the estimated useful life of the Improvement.
 - A discount rate reflecting the current recommended rate published by the Department of Public Service.
 - NYSERDA recommends using the average of the last three years of local energy prices.
 - Changes in expected use of the building and resulting changes in the baseline of energy consumption to which the energy efficiency benefits are applied.
 - Societal benefits of greenhouse gas emissions savings as calculated using the New York State Department of Environmental Conservation's Social Cost Values using a 2% discount rate.²

¹ Department of Public Service, "Technical Resource Manual," revised January 1, 2022
<https://dps.ny.gov/system/files/documents/2022/11/technical-resource-manual-version-9-filed-october-27-2021-effective-january-1-2022.pdf>

² <https://dec.ny.gov/regulatory/guidance-and-policy-documents/climate-change-guidance-documents>

- Projected changes in operation and maintenance costs that are reasonably substantiated, as approved by the PACE Administrator.
- Value of water savings from energy efficiency-related water usage reductions (for example, from high efficiency dish washers and low-flow shower heads).
- Value of energy bills savings and/or revenues associated with installation of renewable energy systems that are installed as part of the Energy Efficiency Improvement project (if included, cost must also be included below).

2. Total Eligible Costs. The following factors and considerations should be applied in the calculation:

- Estimated cost (either total cost of equipment, materials, and labor; or total projected cost of lease, subscription, or power purchase agreement) of the Energy Efficiency Improvement(s), excluding ancillary measures, as described above.
- Estimated cost of renewable energy systems (either total cost of equipment, materials, and labor; or total projected cost of lease, subscription, or power purchase agreement); that are installed as part of the energy efficiency project, if the savings are included in the Total Savings calculation, as described above.
- Any other cost, such as an energy assessment or feasibility study, as required by the municipality, to the extent such assessment or feasibility study is included in the amount to be financed.

3. Incremental Cost Approach. For eligible Energy Efficiency Improvements, “Incremental Cost” and “Incremental Energy Savings” may be used to determine its contribution to the CBR. The Incremental Cost Approach only utilizes the Incremental Cost and Incremental Energy Savings of a Proposed Energy Efficiency Improvement, as compared to a Baseline Energy Efficiency Improvement, without including ancillary measures. The Proposed Improvement must provide increased energy efficiency as compared to the Baseline Improvement.

- Definitions

Baseline Improvement

- The Baseline Improvement must meet the applicable local energy code or NYStretch Energy Code, in effect at the time of approval of design permitting by the local building authority, whichever is more stringent.
- The Baseline Improvement must meet the same engineering, safety, building code, or architectural requirements and specifications as the Proposed Improvement.

Proposed Improvement:

- The Proposed Improvement must have an efficiency or specification that is higher than the applicable local energy code, or NYStretch Energy Code, in effect at the time of approval of design permitting by the local building authority, whichever is more stringent.

Eligible Energy Efficiency Improvements

- Eligible Energy Efficiency Improvements that may utilize the Incremental Cost Approach include measures where the Proposed Improvement is demonstrably more energy efficient than the Baseline Improvement, including but not limited to windows, roof and building envelope, but only those building elements which are directly measure-related to the project.
- The Incremental Cost Approach is calculated as follows:
 - The Incremental Cost to be included in the CBR calculation for the Proposed Improvement equals the total cost of the Proposed Improvement minus the total cost of a corresponding Baseline Improvement, excluding ancillary measures.
 - Although only the Incremental Cost is included in the CBR calculation, the total cost of the Proposed Improvement may be financed through PACE.
- The Incremental Energy Savings to be used in the CBR calculation for the Proposed Improvement is calculated by subtracting the Baseline Improvement energy savings from the Proposed Improvement's energy savings.
 - If the Proposed Improvement does not trigger the applicable local energy code in effect at the time of approval of design permitting by the local building authority, the existing efficiency may be used for determining the Baseline Improvement's energy usage.